



The Monthly Newsletter of the Surrey Amateur Radio Club

April 2011

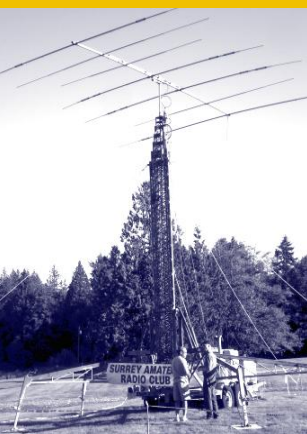
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The SARC Communicator is published monthly for members of the Surrey Amateur Radio Club.

SARC maintains a website at www.ve7sar.net that includes club history, meetings, news and other information.



The Hunt Is On!

The SARC Annual Fox Hunt

The SARC Annual Fox Hunt is now a regular item on SARC's calendar of events and this year it will be held on May 14th.

Radio Direction Finding or RDF is a specialized facet of amateur radio. While improving our RDF skills, we build friendships, challenge our home-brewing skills and most of all have fun. Should you not have equipment, do not let that be a deterrent to attending as we have lots of spare equipment which you can borrow.

You will need a hand-held 2 meter VHF receiver and most use a directional antenna. All home brew varieties are acceptable, including attenuators to weaken the signal when the quarry is close. GPS units of any sort are disallowed. If you are a novice, don't worry we will pair you up with an experienced fox hunter so you can learn.

We will assemble at the parking lot on 129th Street, just south of Crescent Road, at the NW corner of the park. There is ample parking. Do not go to the parking lot at 128th Street and Crescent Road.

At 9am we will conduct equipment testing and provide a pre-start briefing. At 10am the Fox Hunt begins, with a staggered start. all entrants will return to start point within 90 minutes.

The hunt will be followed by a BBQ at 12.30pm to announce the winners and to socialize.

There is no charge for entering and participating in the Hunt. There is a \$10 charge per person for the BBQ, payable on the day itself.

There will be two classes of entrants: a novice class to find 3 foxes and an advanced class to find 5 foxes.

Do come prepared with proper walking shoes and appropriate weather gear.

If you plan to attend either the Foxhunt and/or the BBQ, you must register via email to Anton James at jamesadf@shaw.ca. Further details can be found on the SARC website www.ve7sar.net. It's going to be lots of fun, and I look forward to seeing you there.

- Anton James VE7SSD



SURREY AMATEUR RADIO CLUB
2011 RDF Foxhunt
 Saturday May 14, 2010 at
 Crescent Park, South Surrey

Registration & Instructions 0900, Foxhunt commences at 1000
 Barbeque at 1230
 Talk-in 147.360+ (110.9 tone)

FOXHUNT - NO CHARGE; BARBEQUE \$10

All clubs and individuals are welcome, but we ask that you RSVP Anton James
 VE7SSD jamesadf@shaw.ca if you plan on attending:
 Take Crescent Rd. west from King George Highway near Hwy 99,
 & turn off at 129th St. to parking & assembly area



Meeting Minutes

Gord Kirk VE7GRK—SARC Secretary



April 13, 2011 Meeting Minutes

SARC EXECUTIVE FOR 2010-2011

PRESIDENT

John Brodie VA7XB

VICE PRESIDENT

Don Hamilton VA7GL

SECRETARY

Gordon Kirk VE7GRK

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John Schouten VE7TI

DIRECTORS

Bill Gipps VE7XS

Kelvin Hall VA7KPH

Fred Orsetti VE7IO

John Schouten VE7TI

Gary Skett VE7AS

Chris Zetner VA7CMZ

Meeting Location: PREOC

24 people in attendance.

Welcome

Meeting opened at 7:05 pm by John Brodie VA7XB. Introductions by all with a special welcome to 2 new members who are enrolled in the current ham class.

Financial Report

Scott reviewed expenditures and income since last month, and the balance in the chequing and ING accounts.

Ham Class

We are trying to get another class going in the next couple of weeks. If there is interest please let us know immediately. A discussion occurred about starting an advanced class. We will ask the membership if there is interest. 21st of April is the exam night for the current class.

We will try and structure field day following the ICS structure.

John VA7XB discussed the site 176th and 20th Ave and the high trees we would like to use for antenna's. John spoke about purchasing an antenna launcher type of device. It will cost \$269 US for a CSV19 Antenna Launcher Super Zip Kit. The Membership voted to allow the purchase to go ahead.

Fox Hunt

Reminder to come out to Crescent Park in May 14. A fun family event with a BBQ after. Please let Anton know if you are interested so food for the BBQ afterwards.

Email Anton : jamesadf@shaw.ca

If anyone needs help making a directional antenna let John VA7XB know and he will make his shop available to assist you in making one.

Swap Meet

Aug 21. Moving from an outdoor venue to the Sullivan Hall 152 & 64 Ave. We are working with Langley again. We will have a registered Lottery again. 1st Prize \$500 gift Certificate at the Fairmont Hotel Chain. 2nd prize a Kobo Electronic Reader. 3rd prize \$150 at any Keg Restaurant. Each club has the opportunity to sell half the tickets. Tickets will be available in one week. Each club member is asked to sell a book (or more).

Lottery Grant

Three antennas have been purchased. The next step is to purchase the new repeaters. We are still working on the final selection of equipment.

Website

A website makeover is well under way. It should be ready in the next two weeks. Watch the site for the new design.

Maple Ridge Swap Meet

1st of May. Decision not to purchase a table this time.

New Business

Kjeld thanked the club for support during his recent surgery.

Evening Presentation

John VA7JW (North Shore Amateur Radio Club) gave a presentation "Notes on Lightning" What it is, what it can do, and how you can protect yourself.

Meeting concluded at 9:10 pm.

SEPARS Report

Kelvin is the new president of SEPARS. Fred will continue to be involved but could not continue in the lead role. April 30th ESS Exercise at Fleetwood Community Centre at 12:30

Next Club Meeting

Any members with a Grab n Go kit please bring it next month to show. The meeting will be an intro to SEPARS and what they do etc.

Name Badges

We will be ordering more after the HAM Class ends. Let John VA7XB know if you need one.

Field Day Planning

April 20th next meeting. Location will be sent via email in the next day or two to those who have agreed to help. There is still room for more to volunteer. June 11th there is also a field day training seminar organized by Fred VE7IO. More Info to come.

SEPARS Report

Fred Orsetti VE7IO



Monthly exercise with Langley

The exercises with Langley are suspended for April and May however we will be providing communications for the ESS exercise on April 30th. The June exercise may also be cancelled as SEPAR will be participating in Field Day which is a very good opportunity to practice emergency communications.

The SEPARS April 7th AGM

Gaming funds, school projects, ICS were discussed and John Schouten provided suggestions for the next gaming fund grant application. The major item will be a communications trailer.

Alan Saunders presided over the 2011 - 2012 election of the new SEPARS executive. The following is the 2011 - 2012 executive:

President - Kelvin Hall, VA7KPH
 Vice President - Bill Gipps, VE7XS
 Secretary - Jay Melvin, VE7OFH
 Treasurer - Paulette Schouten, VE7VPE
 Directors -
 Don Hamilton, VA7GL
 Alan Saunders, VA7BIT
 Drew Elvins, VA7DRW
 John Schouten, VE7TI
 Dan Barnscher (for the City)
 Jocelyne Colbert (for the City)

School workshop

The next school workshop will be on Thursday April 28th at Beaver Creek Elementary. This is a two session workshop starting at 7:30am and running until the end of the school day.

There are workshops scheduled with Pacific Heights, Newton Library and two other schools before the end of the calendar year.

ESS exercise

SEPAR will be providing communications for the ESS exercise on April 30th. The exercise will be at the Fleetwood Recreation Center and start at 1200 noon.

Monthly Workshops

The monthly SEPAR workshops continue to provide all SEPAR members with training and an opportunity to get

to know each other. For the March workshop we held a table top exercise led by Kelvin, VA7KPH, and centered on how to properly fill out an NTS message form. Thanks to Jim Hurrell for providing instructions on all parts of the NTS form.

The April workshop will review how to complete a message form and prepare for the ESS exercise.

Weekly Net

UHF practice message handling has been added to the weekly SEPARS net. As well as a practice message on VHF simplex messages are sent on 446.100 simplex and 443.775+ (110.9) after the VHF messages.

Check in if you have not become a regular participant.

Our new Communications Vests

At the March workshop 12 vests were handed out and everyone was very pleased with the jackets. Please remember to wear your SEPAR vest in all upcoming events and if you have not received your vest please contact the SEPAR executive to see if you qualify.

220 Mhz Radios

John Brodie has completed the brackets for mounting the 220 Mhz antennas on the tripods for the grab and go kits. We now have a 220 Mhz radio installed at the radio room and it seems to be working well. Accessing the repeaters in Vancouver, North Vancouver and Maple Ridge was easily accomplished.

The next step is to mount the 220 radios in the three grab and go kits. We plan to have this done before the ESS exercise in order that we will be able to test this band for traffic handling.

73

Kelvin Hall VA7KPH
 SEPARS President and Coordinator
 Fred VE7IO
 Past SEPARS coordinator

I'm certain that all of you join me in thanking Fred for the many hours that he has spent getting SEPARS to the stage that it is today. We're assured that, although he has stepped back from the helm, Fred will continue to remain an active participant with SEPAR and the Society.

Thank you Fred for your many hours of dedicated service and your leadership!

- Editor

Tech Talk

Jim Smith VE7FO

LONG LASTING BATTERY BACKUP FOR YOUR HT

This is day five of a SEPAR callout and you're at home. Your hand held radio (HT) battery is out of juice and you have no means of charging it. What you now wish you had is a substantial, fully charged battery to keep your HT operational for the couple of weeks that Hydro is going to take to restore the power.

WHERE CAN I GET ONE REAL CHEAP?



Organizations which replace all their Uninterruptible Power Supply (UPS) batteries on a scheduled basis will often give them away. These batteries are typically the Sealed Lead Acid (SLA) type which means no gases escape them (provided you don't over-charge them) and so no particular safety precautions are required re

handling or ventilation as well as no need to add water from time to time. Clubs are often given a number of these batteries which are then made available to members.

WHAT DOES IT TAKE TO KEEP MY HT GOING FOR A COUPLE OF WEEKS?

The battery has to have sufficient capacity. Battery capacity is specified in Ampere-hours, abbreviated Ah. A very common UPS battery is rated at 12 Volts and 7 Ah. What this means is that, theoretically, the battery will be able to deliver:

- | | |
|--|------------------------------|
| • 70 Amps for 0.1 hour - well, probably not... | |
| • 7 Amps for 1 hour | • 0.07 Amps for 100 hours |
| • 0.7 Amps for 10 hours | • 0.007 Amps for 1,000 hours |

The battery voltage has to match the voltage expected by your HT. Most HTs will work fine with a 12 Volt battery but you will need to check your HT documentation to be sure. For example, some ICOM HTs cannot be powered from an external source. Charged - Yes. Powered - No.

HOW DOES THIS 7 AMP HOUR CAPACITY TRANSLATE INTO HT OPERATING TIME?

Let's suppose that in order to ration your battery current consumption you listen for a total of 5 hours per day and that your total transmit time in a day is 1/4 hour.

For my old Kenwood TH28A, the current drain would be as follows:

- Receiver current drain is 0.075 A (75 mA) (Loud so others can hear)
- Transmit current drain is 0.100 A (100 mA) (Low power)

To calculate the total ampere hours used in one day:

Receive amp hours per day = 0.075 A x 5.00 hrs = 0.375 Ah

Transmit amp hours per day = 0.1 A x 0.25 hrs = 0.025 Ah

Total amp hours per day = 0.400 Ah

So, number of days you'll be able to use your HT using one of these 7 amp hour batteries is 7 Ah / 0.400 Ah per day = 17.5 days. If you were to listen and transmit for twice as many hours in the day the battery would last for about 9 days. This is based on the Kenwood TH-28A. The current drains for your HT will undoubtedly be different. Still, this shows that one of these batteries can run an HT for quite a number of days.

OK, I'M CONVINCED I NEED ONE OF THESE THINGS. WHAT ELSE DO I NEED?

- A means of charging the battery (BEFORE the power goes off).
- A cable with a fuse in the middle and appropriate connectors on the ends for connecting the battery to your HT.

The Battery Charger — Doesn't have to be expensive. You will encounter two different types

- Trickle charger
- "Smart" charger

The very inexpensive trickle chargers will continue to supply a small amount of current to the battery even when it is fully charged. As this is typically more current than needed to keep the battery fully charged, the battery lifetime will be reduced. For this reason, once the battery is fully charged it should be disconnected from the charger. As batteries lose their charge over a period of time, even when not used, the battery should be reconnected to the charger after three months.

The Smart chargers will supply charging current to the battery until the battery is fully charged. At this point, the Smart charger reduces its output voltage so as to supply just enough current to keep the battery fully charged. Consequently, there is no need to disconnect the charger and it will maintain the battery in the fully charged state indefinitely without overcharging it.

RP Electronics on Rosser St. in Burnaby sells a very suitable Smart charger for about \$25. Part # FC-612C. Charges 6 and 12V batteries. Charging current is selectable.

Cable - Wire size and type - #18 AWG 2 conductor stranded wire. One red conductor and one black, max 20 feet

Fuse holder - you want an in-line fuse holder with a 5 amp fuse. Put this in series with the red conductor.

The fuse is necessary to protect the wire and battery from short circuits. These batteries store a lot of energy so if you short circuit the terminals there's a good chance the battery will blow up and spray sulphuric acid all over the place. So... don't leave out the fuse.

Battery connector - Different batteries have different style ter-



minals so it depends on what battery you get. Most of the ones SARC gets have two metal tabs 1/4" wide and about 3/8" long. A very suitable connector for this is the Pico fully insulated female Quick Connect #1765. It does a good job of covering the metal tab so that if you drop a screwdriver across the tabs it won't short circuit the battery and melt a hole in the screwdriver shaft.

HT DC power connector - Different HTs also have different style power connectors. You will probably need to take the HT with you when purchasing this connector. Some suppliers sell the power connectors with leads attached. This is very desirable as it means you don't have to solder the leads on yourself. As these connectors are quite small, soldering to them is a bit tricky. You **MUST** make sure that you know which wire is to go to the positive (Red) terminal of the battery and which to the negative (Black) terminal. If you get this wrong you will probably cause serious damage to your HT.

Once your cable is assembled (complete with fuse), you connect it to the battery. **Make sure you don't mix up the positive (RED) and negative (BLACK) connections**, plug the other end into the DC In socket of your HT, and you're in business.

HOW TO MAKE THIS EVEN MORE USEFUL

It would be nice if this same battery/cable combination could be used with another HT or if your HT could be plugged into a different battery. There is a way to do this using [Anderson Power Pole](#) connectors. These connectors are used by emergency communicators all over North America so that any radio can be connected to any power source, regardless of what kind of connector is on the radio or power source.



To modify your cable to do this, simply cut it in half, install Power Pole (PP) connectors on the free ends and plug them into each other. For installation instructions see <http://www.westmountainradio.com/supportrr.htm>

NOTE The red and black connectors **MUST** be oriented with respect to each other as shown in the instructions. If you orient yours differently, they won't mate with anyone else's gear.

To operate your radio from a different power source, separate

the PP connectors on your cable from each other and plug the radio end into the PP connector of the new source. Similarly, to use your battery with a different radio, unplug the PP connectors on your cable and plug the battery end into the PP connector of the new radio.

WHAT IF I DON'T HAVE THE NECESSARY TOOLS OR SKILLS TO DO THIS?

If there's enough interest, SARC could put on a workshop session during which you make your cable.

DISPOSAL

At some point, your battery won't hold a charge anymore. Any recycler which accepts standard lead-acid batteries (like the one in your car) should accept it. You shouldn't just chuck it into the garbage.

MORE INFO

Technical overview of the batteries we typically get.

http://panasonic.com/industrial/battery/oem/images/pdf/Panasonic_VRLA_Overview.pdf

Data sheet for the batteries we typically get

http://www.panasonic.com/industrial/battery/oem/images/pdf/Panasonic_VRLA_LC-P127R2P.pdf

- Article reprinted with permission from Jim Smith VE7FO

LOCAL PARTS SUPPLIERS

- Battery charger - [RP Electronics](#)
- Wire - RP Electronics, [Main Electronics](#)
- Connectors - Canadian Tire, RP Electronics, Main Electronics, [Lee's Electronics](#)
- Fuse holders - Canadian Tire, RP Electronics, Main Electronics, Lee's Electronics
- Power Poles - [MRO Electrical Supply](#), 1st and Boundary

The Delta Amateur Radio Society is in the planning stages of an Advanced Radio course tentatively scheduled for mid October 2011.

This is an excellent opportunity for anyone holding their basic or basic with honors to upgrade to advanced.

Delta ARS would like to get a reading on how many hams would be interested in taking this course. Anyone interested in receiving more information on the course as it becomes available (ie dates, fees etc.) are asked to send an email to:

advanced@deltaamateurradio.com

The Delta Amateur Radio Society would also like to invite you to our Hamburger & Brew night at the Sundance Pub in Ladner on Thursday, April 28. It promises to be fun evening as we have door prizes, a 50/50 draw, silent auctions and a toonie toss all planned.

Tickets are only \$15 per person and the evening gets started at 6:30 with the meal being served around 7 pm. Any member of the Delta Amateur Radio Society can obtain tickets for you or you may pay using PayPal on our website and we'll have your tickets waiting for you at the door. All the details of the event can be found at <http://www.deltaamateurradio.com/>

Click on beer & brew night on the left side listings.

QRM

News Clips

The Principality of Sealand

Location, the English Channel, a nice place to visit but...

After WWII, several British gun platforms were abandoned in the English Channel. In 1967, a pirate radio broadcaster took up residence in one of them and declared the fort an independent nation, and after a run-in with the Royal Navy a court ruled that Sealand was outside British jurisdiction.

It's been operating more or less as its own country ever since, issuing passports, currency, and tourist visas. There was even an attempted coup that involved helicopters, a shotgun, and several hostages, resulting in a German diplomat being sent to the nation.



Freedom from legal restrictions has made Sealand an attractive base for online casinos and files Sharers, so "custodianship" of the principality is currently on sale for the low, low price of 750 million euros.

<http://www.sealandgov.org/>

Hmmm, perhaps a good place to work the Islands contest...

Narrow Band Emergency Messaging Software (NBEMS)

Dave, KB3FXI has made available a video of NVIS net operations on 80m with MT63 1k long using the FLMSG auto open feature and the NTS/Radiogram form.

Narrow Band Emergency Messaging Software (NBEMS) is an Open Source software suite that allows amateur radio operators to reliably send and receive data using nearly any computer (Windows, Mac, and Linux) and any analog radio without requiring a dedicated digital infrastructure or specialized modem hardware. NBEMS works on both VHF/UHF FM and on HF.

The YouTube description reads:

"NBEMS video of auto open feature with FLMSG. Messages are automatically detected, extracted, saved and displayed in both FLMSG program and default web browser."

Watch the NCS form auto open!

Download NBEMS from <http://www.w1hkj.com/>

NBEMS article: <http://wedoathradio.wordpress.com/2008/04/14/nbems/>

YouTube demo: http://www.youtube.com/watch?v=i1V7kgrrnRk&feature=player_embedded

Amateur Radio and Social Networking

Amateur Radio gets a prominent mention in a BA Business News article about Email, Twitter and Facebook by former Short Wave Listener (SWL) Jonathan Margolis.

Jonathan, a Financial Times newspaper columnist, is the brother of well known Radio Amateur Laurie Margolis G3UML. In the article he describes how he grew up in a family of radio hams and says he sees Facebook and Twitter as the new ham radio.

Read the BA Business Life article 'Is Email Dead?' at <http://www.babusinesslife.com/Tools/Tech-And-Gadgets/Is-email-dead.html>

Jonathan Margolis (SimplyBestTech) on Twitter

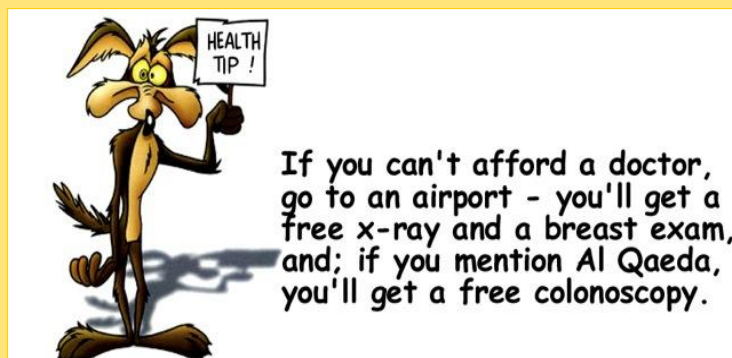
<http://twitter.com/SimplyBestTech>

Read how BBC reporter Laurie Margolis G3UML scooped the 1982 Falkland Islands invasion news. This page also has an audio recording containing Amateur Radio transmissions from the Falkland Islands

<http://news.bbc.co.uk/1/hi/uk/6514011.stm>

Laurie Margolis G3UML on Twitter

<http://twitter.com/lauriemargolis>



Tones, Tone Squelch and DTMF

CTCSS and CDCSS

The term "Continuous-Tone-Controlled-Squelch-System" (CTCSS) and "Continuous-Digital-Controlled-Squelch-System" (CDCSS) define a system where the radio receiver is equipped with tone or data capability which allow audio signals to appear at the receiver audio output, select voice processing such as scrambling, select between voice or data, or control repeater functions, only when a carrier modulated with a specific tone or data pattern is received.

CTCSS and CDCSS are used for many purposes. In many cases, CTCSS and CDCSS are used to restrict access to a repeater, so that only those units which transmit the correct tone along with their signal can "talk to the repeater." In some (rare) instances, you may also need to have your radio coded correctly to "hear" the repeater.

CTCSS and CDCSS are also used in areas of high interference where there are several stations with output frequencies in close proximity with one another. FRS is a common example. Because of the abundance of FRS radios, 'codes' are often offered as a feature in an attempt to 'privatize' FRS transmissions. Of course there is no actual privacy to FRS, the tone only opens up your receiver and everyone else still hears the transmission. Without tone squelch, you may hear multiple communications at the same time. The stations could even interfere with each other to the point where it is impossible to clearly receive either one. When your transceiver, is equipped for CTCSS often referred to simply as 'tone squelch', you can code a simplex output frequency with a specific CTCSS tone 'code'. If the station you are talking to is programmed to the same tone, either receiver will only 'hear' when it receives the specific tone. Then, when multiple signals are broadcast on that frequency, you will only hear the transmission with the CTCSS tone you have programmed. If you do not receive the correct tone with a signal, the squelch of your radio remains closed and you will not hear anything.

Establishment of the CTCSS tone for each transmitter (or repeater) is usually done

through the cooperative settings of standards by local frequency allocation groups.

DTMF

DTMF means: Dual Tone Multi-Frequency. The signal generated by a DTMF encoder is a direct algebraic summation, in real time, of the amplitudes of two sine (cosine) waves of different frequencies. i.e. pressing '1' will send a tone made by adding 1209 Hz and 697 Hz.

DTMF is also the basis of 'touch-tone' dialing on your telephone. The touch tone system uses pairs of tones to represent the various keys.

There is a "low tone" and a "high tone" associated with each button (0 through 9, plus * (star) and # (octothorpe or pound symbol)). The low tones vary according to what horizontal row the tone button is in, while the high tones correspond to the vertical column of the tone button.

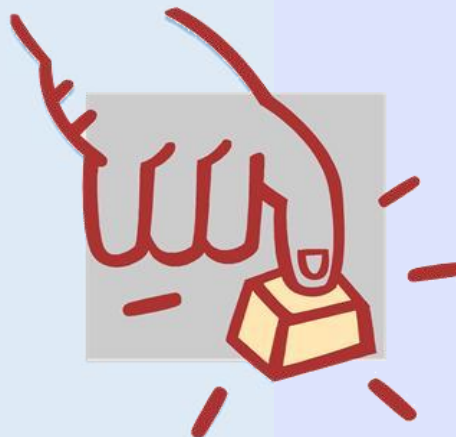
The tones and assignments are as follows:

- 1 697+1209 Hz
- 2 697+1336
- 3 697+1477
- 4 770+1209
- 5 770+1336
- 6 770+1477
- 7 852+1209
- 8 852+1336
- 9 852+1477
- 0 941+1336
- * 941+1209
- # 941+1477

For example, when the 4 button is pressed on your phone or radio keypad, the 770 Hz and 1209 Hz tones are sent together. An autopatch will then decode the number from this pair of tones. These are audible tones normally used to send instructions to a device such as an autopatch. CTCSS tones are meant to be sub-audible and not heard during an actual transmission.

Royal Wedding special event station

Operators Chris MODOL and Gary MONNH will be using the special amateur radio callsign GB4RW on April 29th, to celebrate the Royal Wedding of HRH Prince William of Wales and Miss Catherine Middleton.



Application Notes

Gary Skett VE7AS



Antenna Gain: dBi vs. dBd - Secrets of the Decibel

I was recently asked why antenna gain is measured in either dBi or dBd.

It is important to note that antenna gain is different than amplifier gain. Antennas do not have a power source that allows the antenna to create additional energy to boost the signal. An antenna is similar to a reflective lens in principle - it takes the energy available from the source and focuses it over a wider or narrower area.

Antenna gain is then a measure of the amount of focus that an antenna can apply to the incoming signal relative to one of two reference dispersion patterns. Sales departments tend to list antenna specs in dBi because the numbers are higher and therefore more "impressive."

dBi is the amount of focus applied by an antenna with respect to an "Isotropic Radiator" (a dispersion pattern that radiates the energy equally in all directions onto an imaginary sphere surrounding a point source). Thus an antenna with 2.1 dBi of gain focuses the energy so that some areas on an imaginary sphere surrounding the antenna will have 2.1 dB more signal strength than the strength of the strongest spot on the sphere around an Isotropic Radiator. It's not "real" or obtainable... it's a lab reference figure, so the savvy Ham will basically disregard the theoretical for the real-world figures.

dBd refers to the antenna gain with respect to a reference dipole antenna. A reference dipole antenna is defined to have 2.15 dBi of gain. So converting between dBi and dBd is as simple as adding or subtracting 2.15 according to these formulas

To convert dBi to dBd:

- Gain in dBd = gain in dBi - 2.15 dB
- Gain in dBi = gain in dBd + 2.15 dB

Specifying antenna gain in dBd means that the antenna in question has the ability to focus the energy x dB more than a dipole.

Recommended antenna gains:

- Omnidirectional: 3 dBd to 6 dBd
- Directional: 8 dBd and higher.

Note: High gain antennas are of limited use in extending the range in a non-Line-of-Sight (non-LOS) environment. In a non-LOS environment the obstructions contribute more losses to the system than the antennas are able to overcome. Also, the obstructions cause the signals to bounce and arrive at the antenna from different angles so it is desirable to have an antenna with a wide beam width and a lower gain.

Generally, narrow beam width VHF/UHF yagis are used for something like moon-bounce or some satellite work, and SSB DX. A more practical "beam" would be a yagi with 4 or less elements...you get some reasonable gain, a moderate beam width and directivity, yet it doesn't need a tracking system to follow a mobile station... You'd use a yagi like this if you were here on the mainland and wanted a better signal into a Victoria or a Courtney/Comox repeater or something from here into the eastern Fraser Valley.

Beam Width

Note that antennas with higher gain focus the energy over a smaller area and because higher gain antennas achieve the extra power by focusing in on a smaller area it is important to remember that the greater the gain, the smaller the area covered as measured in degrees of beam width (think of an adjustable beam flashlight). In many cases a high gain antenna is a detriment to the overall performance because your station may need to have reception over a larger area.

General Gain/Loss figures in Db

+ 3db is twice the power output and twice the receive signal

+6db is 4 times the power...

+10 is 10 times

+20 is 100 times

+30 is 1000 times... (yes the decibel is logarithmic ...)

On the loss side...

-3db is twice the loss (or half) the power or signal strength, 6db is ¼ the power, -10db is 1/10th, etc...

So a dipole is a "unity gain" antenna... 100 watts in, 100 watts out (in theory) assuming no loss in transmission lines or connectors... A quarter-wave ground plane [for any frequency] is also said to have a 0dbd gain figure. Your rubber ducky helical whip on your handheld usually exhibits a loss, somewhere in the range of - 1.2 to 2.15 dbd and such are a compromise at best... good thing your local repeater only needs Pico-watts of signal to work!

General rule of thumb, any antenna that is physically shorter than a ½ wave dipole or a ¼ wave ground plane will not have “gain” and may even convert a fare portion of your RF energy to heat... Yet we have magnetic loops,

helical whips, base, centre and top loaded coil antennas... and a myriad of other shapes and sizes of antennas for the Ham to experiment with... and most all of them will yield contacts.

News You Can Use

What's Happening in Amateur Radio

Winter 2011 BASIC Ham Course

18 participants will be writing their BASIC exam on Thursday April 21st.

Spring 2011 BASIC Ham Course

The April 7th deadline was dropped as we are waiting to fill the 10 spots required to make it cost effective to run. We had some earlier enquiries from the RCMP and other services, but have not had the numbers come forth to run the course. We will keep this opportunity open until mid to late May, otherwise we'll plan for a Fall 2011 course in late September. For more information, contact Gary VE7AS at ve7as@rac.ca

New Ham Seminar

See the flyer on the [SARC website](#).

Everything is a go for a New Ham Seminar at the Fire Training Centre on Saturday May 7th from 0900 to 1500. Besides sessions like HF 101, What do all the knobs, buttons and switches do...and everything you ever wanted to know about Ham antennas, we'll have a vendor or two there to show off and sell their wares.

SARC club members will be there to set up a working HF station, and we'll have a grab and go kit to gawk at, a demo of the D-star system, IRLP and Echolink as well as some other surprises...

Coffee and donuts will be available for a donation, but if you can't survive the day on this diet, we recommend you bring a bag lunch as there isn't a lot around the immediate neighbourhood as far as fast food.

To date (April 13th) we have 24 registered and seating for 30. Any Ham licensed for less than 18 months is invited to attend. There is no fee for the Seminar, but bring cash if you want to buy a handheld from a vendor or put a deposit on an HF radio or antenna. There will also be a 50/50 draw and we are working on a door prize for a \$2 ticket.

Participants are encouraged to bring note-taking tools. There is no wi-fi/internet in the facility, but there will be a lot of URL addresses mentioned throughout the seminar, verbally and in the various PowerPoint slides throughout the day.

CW Practice

It is very informal, on Monday evening we try to be on between 2000 to 2100 for about 30 minutes or so on 144.100 in CW mode. I'm sending with my Bencher paddle either off the top of my head or read from some Ham magazine or article on my desk at the time.

It's open to all who can hear and work CW on their multi-mode VHF radio.

For more information on any of the above or to register, contact Gary VE7AS at ve7as@rac.ca

Amateur Radio Swap Meet

SULLIVAN COMMUNITY HALL
6306 152ND ST. SURREY

SUNDAY AUGUST 21, 2011

10 AM -1 PM (9 AM SETUP FOR VENDORS)

Sell from an indoor table or from your vehicle in the parking lot.

Buying and selling of used and new amateur radio items and electronics, with commercial exhibits, RAC table, and QSL bureau. Door prizes and raffle prizes total value \$1000. Raffle 1st prize is a \$500 gift certificate for use at any Fairmont Hotel (Empress, Whistler, Banff, Vancouver etc.) 2nd prize is a KOBO ebook reader; 3rd prize is a \$150 gift certificate for the KEG Restaurant.

Food and refreshments will be available.

Prepayment will ensure your table or tailgate reservation. \$25 for table or \$15 for tailgate spot (both include vendor's admission); tailgaters bring your own table, chairs and cover if desired; \$5 admission for buyers.

To get there from Highway 1, at east end of the Port Mann bridge, take the 152nd St. exit and proceed south to 1/2 block past 64th Ave. From the US border, take the Pacific crossing onto 176th St (Pacific Hwy) and proceed north to 64th Ave. then turn west to the destination at 152nd St.

SARC President's Comments

John Brodie VA7XB



Field Day (FD) is the No. 1 event of the Year for amateur radio clubs across North America. It is also our chance to show the public what we are capable of should a large-scale incident such as earthquake, tsunami, hurricane or major forest fire require that we set up an independently powered radio station to provide emergency communications with the outside world. The somewhat chaotic conditions on the air during FD provide excellent practice for what we can expect in the aftermath of such an event. There is room at FD for both experienced and new operators. It is challenging, but more fun than difficult, and the SARC Executive urges all members to participate.

As you all know, it has been our practice in recent years for SARC and SEPARS to joint venture this event with Langley Amateur Radio Association. This year it is SARC's turn to host the event, which will be held at Grandview Heights School Grounds located at 20th Ave. and 176th Street, courtesy of Surrey Fire Services, who kindly made the necessary arrangements with the Surrey School Board. This site is excellent in nearly every respect, including high elevation with tall trees for wire antennas, ample room for campers, trailers and RVs and good public access (including parking). A first-rate array of radio equipment will be supplied courtesy of SEPARS. We will have our big 100 ft. tower as well as "Big Yellow", both equipped with beams, plus an array of wire antennas for the low bands plus LARA's satellite station, and VHF setups.

The first FD planning meeting will take place on Wednesday evening April 20th. A suitable venue is now being secured to accommodate the planning team. The fundamental objectives at this session are twofold: 1) to ensure that all the tasks requiring early planning are initiated in a timely manner, and 2) to assign team leaders. Since FD is in fact an emergency exercise, we plan to organize the duties around the "Incident Command System". John VE7TI, a qualified ICS trainer, will be on hand to explain how this works.

In 2010, the SARC/LARA team came 3rd in Canada and 2nd in BC in Class 3A. It is our intention to "Go for Gold" this year, which means we need to be well-prepared and well-equipped because we have some tough competition to beat. In order to introduce and allow practice of the necessary skills, a "Field Day 101" session, organized by Fred VE7IO, is planned for Saturday morning June 11th. Fred will review FD operating techniques, logging procedures, and station setups. Beginners especially will not want to miss the chance to see what it is all about. Nearly everything you need to know can be learned in a couple of hours and you too can operate like a pro and watch the points accumulate. Choose your mode, CW, SSB, digital or FM... there is a place for every level of skill.

Prior to the event, we need to ensure that the dignitaries are invited, the press knows what is going on and we get the maximum public exposure. Our clubs consistently dip into our financial resources to support this event but this year SARC was successful in its application for a Surrey Municipal grant which means that the deficit from rentals, food, gasoline, advertising etc, will be significantly reduced or eliminated entirely.

We need people to:

- Organize the technical side (radios, antennas, generators, etc.)
- Network the computers, install logging software and ensure it is working properly
- Set up equipment, tents and displays on the day of the event
- Operate around the clock, SSB, CW, digital, VHF
- Assist beginners to operate in the "Get on the Air" (GOTA) setup
- Cook and organize meals
- Arrange publicity, invitations and signage
- Meet & greet dignitaries and visitors when they show up
- Monitor safety

Stay tuned for more information as the planning unfolds and even if you are not part of the organizational phase, please be willing to offer your assistance with the many tasks that have to be done before, during and after the event.

DOWN THE LOG...

SARC Monthly Meetings

2nd Wednesday (Sept-Jun)
1900 hrs local at PEP PREOC,
14275 96th Avenue, Surrey, BC

Weekly Club Breakfast

Friday at 0830 local
ABC Country Restaurant located
at 600 - 7380 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 local
on 147.360 MHz (+) Tone=110.9

SEPARS Net

Tuesday at 19:30 local
on 147.360 MHz (+) Tone=110.9

Announcements & News

Next SARC Meeting
Wed., May 11th, features SEPAR
and Grab 'n Go kits—Bring yours
to demo!

SEPARS Monthly Workshop
Third Thursday, 7 to 9:30pm
Rm. 214, 13569 76th Ave.

New Ham Seminar

May 7th from 9 to 3 pm, at the
Surrey Fire Service Training
Centre.

Fox Hunt

May 14th. Mark your calendar,
Anton VE7SSD is the contact.

On the Web ve7sar.net

Between newsletters, watch
your e-mail for announcements
of events, monthly meetings and
training opportunities. These
announcements may also be
found on our web page.

SARC hosts an Amateur
Radio net each Tuesday eve-
ning at 8 PM. Please tune in
to the VE7RSC repeater at
147.360 MHz (+600 KHz)
Tone=110.9, also accessible

on IRLP node 1980 and Echolink node
496228. On UHF we operate a re-
peater on 443.775MHz (+5MHz)
Tone=110.9 and IRPL node 1463.
Coming soon, a repeater at
224.000MHz (-1.6MHz).

VIA THE WEB

www.ve7sar.net

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VE7YXC

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